

## COURSE OUTLINE

### 1. GENERAL INFORMATION

<b>FACULTY</b>	ECONOMY AND MANAGEMENT		
<b>DEPARTMENT</b>	ORGANIZATIONS MANAGEMENT, MARKETING AND TOURISM		
<b>LEVEL OF STUDY</b>	UNDERGRADUATE		
<b>COURSE CODE</b>	<b>1605-230704</b>	<b>SEMESTER</b>	<b>7<sup>th</sup></b>
<b>TITLE</b>	<b>Business Intelligence and Analytics</b>		
<b>Autonomous Teaching Activities</b>		<b>WEEKLY TEACHING HOURS</b>	<b>CREDITS</b>
Lectures, Laboratory Exercises		3	5
<b>COURSE TYPE</b>	GENERAL KNOWLEDGE SPECIALIZATION		
<b>PREREQUISITE COURSES</b>	NONE		
<b>TEACHING LANGUAGE</b>	GREEK AND ENGLISH		
<b>COURSE OFFERED TO ERASMUS STUDENTS</b>	YES		
<b>COURSE WEBPAGE (URL)</b>			

### 2. LEARNING OUTCOMES

<b>Learning outcomes</b>
<p>In today's business environment it is imperative to continuously monitor, identify and understand all the activities of a business and its environment, through data collection and analysis, in order to support business management in informed decision making and optimal data-driven planning.</p> <p>The course of Business Intelligence and Analytics (Business Intelligence and Analytics) refers to methods and processes aimed at data extraction and their conversion into knowledge, as well as the use of this knowledge in support of a wide range of management and marketing tasks, such as trend discovery, the study of customer behavior, multi-criteria decision making and performance appraisal. Business Intelligence is based on specialized analytical tools for statistical processing and data visualization, as well as technologies for data mining, machine learning, and artificial intelligence.</p> <p>Upon successful completion of the course, the student will be able to:</p> <ol style="list-style-type: none"> <li>1. <b>KNOWLEDGE:</b> recognize and describe concepts, theories, and problems related to Business Intelligence in the modern business and technological environment.</li> <li>2. <b>UNDERSTANDING:</b> be familiar with Business Intelligence technologies and be able to generalize them practically in an organization.</li> <li>3. <b>APPLICATION:</b> calculate the scope, capabilities, and limitations of the available Business Intelligence technologies.</li> <li>4. <b>ANALYSIS:</b> design and develop goals and select the appropriate tools to achieve them.</li> <li>5. <b>COMPOSITION:</b> explain the importance of Business Intelligence for the successful development of a business.</li> </ol>

6. EVALUATION: evaluate his / her professional career.

#### General Skills

- Search, analysis and synthesis of data and information, using the necessary technologies
- Adaptation to new situations
- Decision making
- Autonomous work
- Teamwork
- Work in an international environment

### 3. COURSE CONTENT

The Business Intelligence course includes elements of data science theory in an intelligible form, applications and software demonstration in the form of lectures, as well as laboratory exercises performed by students in the form of assignments (projects). The following sections are included:

1. Introduction to the concepts of Business Intelligence. Widespread applications, approaches and practices, and the role of management/marketing.
2. Method categories, basic principles, and available technologies.
3. Data sources, data collection, organization, and evaluation. The main providers of data and large data volume management services.
4. Presentation of available Business Intelligence software, suitable for business executives. Familiarity with the Rapidminer analysis environment.
5. Descriptive analysis. Statistical processing and aggregation, reports, data visualization, and smart dashboards.
6. Online analytical processing (OLAP) and data warehouses.
7. Classification/prediction methods. Application in the prediction of customer satisfaction.
8. Segmentation / classification methods. Application in market segmentation and the construction of customer profiles.
9. Association rules (Market Basket Analysis). Application in the estimation of customer needs and the configuration of offer packages.
11. Recommendation systems. Application to personalized promotions.
12. Free text editing and sentiment analysis. Application in monitoring trends through comments on social networks.
13. Knowledge management systems to support decision-making.

### 4. TEACHING AND LEARNING METHODS - ASSESSMENT

<b>TEACHING METHOD</b>	Face to Face
<b>ICT USE</b>	Electronic presentations (e.g., PowerPoint). Use of special data analysis and knowledge mining software. Distance learning platform in the sharing of educational material and asynchronous learning.

TEACHING ORGANIZATION	Activities	Working Load per Semester
	Lectures	36
	Laboratory Exercises	9
	Project	45
	Self-study	60
	TOTAL	150
ASSESSMENT	<p>Written exams (60%) Semester work (40%)</p> <p>The test material is posted on Moodle and before the test time is spent on answering questions about the test material. A file of students' examination documents is kept until they receive their degree. After the exam, time is available to each student to clarify his / her mistakes and explain his / her grade.</p>	

## 5. REFERENCES

### ***-Suggested bibliography:***

- 1. Data management and business intelligence, Stalidis, G., Kardaras, D. [electr. book] Athens: Association of Greek Academic Libraries, 2015, Available freely at: <http://hdl.handle.net/11419/1161>
- 1. Business intelligence and data mining: Discovery of Knowledge for Business Decision Making, Kyrkos Efstathios, 2016 [electr. book] Athens: Association of Greek Academic Libraries. Available at: <http://hdl.handle.net/11419/1226>
- 2. ROIGER RICHARD J, GEATZ MICHAEL W. (2008). INFORMATION EXTRACTION: AN INTRODUCTION GUIDE WITH EXAMPLES, KLIDARITHMOS PUBLICATIONS LTD.
- 3. Dunham Margaret H. (2004). Data mining, PUBLICATIONS OF NEW TECHNOLOGIES.